

ABSTRACT

Provided is a direct heating tube which has a sufficient heating rate and a sufficient cooling rate, and has no cold spots therein, making it possible to ensure a uniform temperature distribution in the whole part thereof or a temperature distribution having a desired temperature gradient, and making it possible to keep constant the temperature of a fluid which is caused to flow through the tube or to give a desired change to the temperature of the fluid. Provided also is a direct heating tube which does not exert an adverse influence on devices near the tube, such as a detector and an oven, even by heating the tube. In a desired portion of the tube to be heated, a second heated tube connected to a first heated tube is provided outside the first heated tube, and an electrode portion is connected to the second heated tube.